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Russia's Natural Resources in the World Economy: History, Review and Reassessment

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Abstract

Russia's role in the global economic system today, and the Soviet Union's in the past, is dominated by the export of natural resources, particularly oil and gas. The rents earned from these exports are both a source of strength and weakness, as they link the fortunes of Russia's domestic economy to the volatility of global resource markets. This paper returns to a major research project conducted through the offices of the Association of American Geographers that resulted in *Soviet Natural Resources in the World Economy*, published in 1983. The project was first conceived in the aftermath of the resource crisis in the 1970s and concluded in the early 1980s as the Soviet Union sought to increase resource exports to support a failing domestic economy. This paper examines the origins, evolution, and management of this seminal work and presents a re-reading of the book in a contemporary context. We develop some of the key themes of the original project and conclude that it has contemporary relevance, as a reliance upon the resource sector remains a defining characteristic of Russia's political economy and continues to shape Russia's role in the global economy. We find that the regional dimension that was so important in the original project remains critical as Russia seeks to extend the resource frontier into new regions in the Arctic and the East and, at the same time, reduce its reliance on European markets—that are both stagnant and hostile—by developing new markets in Asia.

Key Words: Soviet Union, Russia, Natural Resources, Exports, Regional Development.

1. Introduction

Under the aegis of Victor Winston, the journal *Soviet Geography* (and later, *Post-Soviet Geography*) thrived on analyzing the Soviet Union's resource geographies. The annual report on the Soviet energy industry, written first by the founding editor Theodore Shabad and later by Matthew Sagers, was a mainstay of the journal and essential reading for anyone interested in the Soviet economy. The journal's focus on resources and regional development reflected the fact that it was largely through its resource economy that the Soviet Union interacted with the world economy, both within the so-called international socialist division of labor where it supplied cheap energy and raw materials to Eastern Europe and with the capitalist system where its oil and (later) natural gas exports became increasingly significant. In the latter decades of the Soviet era it was trade with the West that earned the hard currency (the Soviet ruble was not a convertible currency) that was used to purchase imports of agricultural products to compensate for shortages and western technology to compensate for problems with the domestic innovation process (Bradshaw 1987). In a very real sense, the USSR's natural resource wealth was mortgaged to address key failings in the Soviet economic system without the need for risky economic reform. Thus, the Soviet Union's fortunes and its impact on the world economy were tied to its resources sector. As we shall see, this is a theme that has significant contemporary resonance.

In 1983 the University of Chicago Press published *Soviet Natural Resources in the World Economy*. Edited by Robert G. Jensen (Syracuse University), Theodore Shabad (New York Times), and Arthur W. Wright (University of Connecticut), this impressive volume comprised 31 chapters, the work of 29 contributors, and was supported by 109 illustrations and 246 tables (see appendix 1 for a full list of authors and chapters). It represented the high point in the activities of the Association of American Geographer's (hereafter AAG) Soviet and East European Studies Specialty Group (today the Russian, Central Eurasian, and East European Specialty Group) through the work of a group of scholars that were also the key contributors to the journal, *Soviet Geography*. But, it was also a truly multidisciplinary effort involving contributors from economics, political science, engineering, and energy studies. Although the majority of the contributors were based in the United States, there were also contributions from Canada and the United Kingdom. The project that produced the book was prompted by the energy crisis of the early 1970s and the emergence of the Soviet Union as a major resource exporter.

Before examining the original project in detail, it is useful to consider the contemporary context. In the summer of 2008, when the oil price peaked at 147 USD a barrel, Russia and its president, Vladimir Putin, were brimming with confidence. Its position as a major energy and raw material exporter had financed an extended period of economic growth (and a re-nationalization of a large part the oil industry). As resource prices climbed and Russia became increasingly aggressive on the international stage, the parallels with the 1970s were clear. Just as in the early 1980s when dependence on energy exports proved to be the Achilles' heel of the Soviet economy, so the 2008 global financial crisis—and related collapse in the oil price—hit Russia hard, and it fared the worst of the G20 economies. But oil prices soon recovered, Russia's political economy survived intact, and Putin was elected President for a third term in 2012. However, the collapse in oil prices since 2014 has shown that the Russian economy remains critically exposed to oil price volatility, and the sustainability of economic development strategy is once more being called into question (for a recent analysis, see Bradshaw and Connolly 2016; Connolly and Hanson 2016).

In 1974 it was the Soviet Union's resource wealth and its increased foreign trade activity that prompted a group of US geographers to conceive of a program of research initially entitled, "Future Prospects of Energy and Resource Development in the Soviet Union and its Impact on the Planned Economies and the World Economy at Large." Just as now, the original project rode a wave of increasing energy prices, but by the time its findings were published, the oil price had fallen and the Soviet economy was beginning to falter.¹ With the benefit of hindsight, we know that the loss of the rents generated by resource exports was a crucial element in the eventual collapse of the Soviet economy (Gaddy and Ickes 2005). While the project did not predict such a collapse, it did make clear the unsustainable nature of the Soviet Union's resource export strategy; thus, as we shall see, there are clear parallels with Russia's current predicament. Consequently, a review and reassessment of the project is not just an intellectual trip down memory lane and a fitting contribution to this special issue for Victor Winston, it speaks to some of the key issues that face Russia today and that will continue to shape its future in the early decades of the twenty-first century.

This article is divided into three substantive sections. The first section examines the origins, evolution, and management of the original research program and the subsequent publication of the volume in 1983. The second section presents a re-reading of the book and adopts a book review format. The third section develops some of the key themes from the original project to present a contemporary reassessment of the role of Russia's natural resources in the global economy.² The article concludes by considering the enduring challenges that will shape the future prospects for Russia's natural resource sector.

2. Soviet Natural Resources in the World Economy: the research project

Initial discussions about a potential project took place at the AAG Annual Meeting in Milwaukee in 1974. A two-page brief, drafted by George W. Hoffam (University of Texas at Austin) and Theodore Shabad was presented to the AAG Council. The council evidently liked the idea and commissioned an ad hoc committee, chaired by George Hoffman, plus Leslie Dienes (University of Kansas), Theodore Shabad, and Arthur Wright to draw up a more detailed proposal. In the summer of 1975 the ad hoc committee met in Washington DC to work on a draft proposal. At this early stage, then-Executive Director of the AAG, J. Warren Nystrom asked why the project should be conducted through the offices of the AAG. Hoffman's response was that, "The project is so massive it is beyond the capability of an individual or a department. Also the project is interdisciplinary in character involving not only geographers but also economists and probably others" (Correspondence August 21, 1975). In addition, the AAG had ample experience in managing large projects and had a good track record in program and financial administration. Nystrom was convinced and agreed that the AAG should manage the project and that funding would be sought from the National Science Foundation (NSF). An initial proposal was drawn up for a project now entitled *Soviet Natural Resources in the World Economy*.

2.1 Finding funding and a project director

The initial proposal envisaged a start date of September 1976, with a projected finish of January 31, 1979. Allan Rodgers (Pennsylvania State University) was initially identified as the Project Director, with Shabad the coordinator of research and editor of the publication.³ The initial list of potential participants included 14 geographers, 10 economists, and 3 political scientists, the majority of whom went on to contribute to the project. According to the authors of the proposal, the project was prompted by the convergence of several events:

1. The post-1973 energy/raw material crisis and associated price increases for a range of natural resources that the USSR specialized in;
2. A conscious decision on the part of the Soviet leadership to increase the USSR's involvement in foreign trade, which has resulted in an increased commitment to the exploitation of Siberia's natural resource wealth, a key element being the decision in 1974 to proceed with the construction of the Baikal-Amur Mainline (BAM) railway; and
3. The era of détente and the associated improvement in East-West relations.

The abstract stated that “The purpose of this study is to bring the integrative research approach and spatial concerns of geographers and the expertise of cognate disciplines (economics, geology, political science) to bear on a long-range analysis of the prospects of Soviet resource exports and the implications for the world economy at large.” A two-fold strategy was adopted, with a first phase dedicated to an assessment of Soviet export potential “to determine what Soviet commodities are likely to be available over the next 15-20 years;” and a second phase that would assess the impact of Soviet exports on the world economy. The project envisaged an intellectual division of labor whereby the geographers would bring an integrative approach and a concern with spatial relations; the economists, an analysis of economic variables and forces; the geologists and engineers, the basic physical and technical relationships that underlie the study; and the political scientists, insights into the key policy issues involved. What George Hoffman described as a “final proposal”⁴ went to Warren Nystrom on December 12, 1975 (Correspondence December 12, 1975). The ad hoc committee considered its work complete and awaited the response of the AAG Council. The matter of the project director was undecided and a final budget was not provided. Most of the comments from Council were brief, with nine recommending approval and one abstaining (because the project was outside his area of expertise). Warren Nystrom's assessment was that there was some criticism of the project's organizational structure (who was to do what, when), the lack of a detailed time schedule, and the lack of a budget.

This final version retained the basic rationale for the project, but now adopted a three-phase strategy: Phase 1 would provide an in-depth study of those natural resources that were likely to play a significant role in Soviet foreign trade over the next 15-20 years, to 1990. Phase 2 would provide an assessment of Soviet resource policy that would itself have three distinct elements: 1) individual commodity policies, 2) regional policies, and 3) foreign trade policies. Phase 3 would provide an assessment of the implications of Soviet resource potential and resource policies for the world economy. At this time Allan Rodgers wrote to Nystrom expressing concern about the proposal, which he felt lacked a tight structure, conceptual framework, and a detailed step-by-step plan. Furthermore, he questioned whether some of the research in phase 1 had not already been conducted by other “agencies and groups,” an issue that was also raised by the AAG Council.⁵ Nystrom consulted a “good friend” in the intelligence community who was critical but overall positive, suggesting that the proposal needed a clearer statement of general objectives and a clearer discussion of methodology.

By early 1976 Robert Jensen (Syracuse University) was identified as the favored candidate for project director. On February 1, 1976 George Hoffman wrote to Jensen asking him if he would be interested in the role of project director. Although we could find no formal letter of acceptance in the AAG archives, by June Jensen had accepted the role and was working on preparing a revised proposal and budget. In June 1976 Nystrom expressed continuing concerns about the sections on data and methodology and the role of the AAG (Correspondence June 18, 1976.) Further work was done, and in the summer of 1976 a

revised version of the proposal was submitted to the AAG Council and received unanimous support. Nystrom's friend at the CIA pronounced it "very good, greatly improved."⁶ The final proposal was submitted to the NSF in November 1976, more than two years after the initial discussions in Milwaukee. It envisaged a start date of April 1, 1977 and duration of 29 months.

2.2 Management of the project

In February 1977 Nystrom wrote Jensen, Shabad, and Wright indicating that prospects for NSF funding were very good. From correspondence it is clear that the NSF wanted more detail on who exactly would be doing what on the project (Correspondence March 14, 1977). A final version of the proposal was submitted to the NSF on April 27, 1977 (Correspondence April 27, 1977). The project now had a start date of July 1, 1977 and duration of 24 months; the revised budget was \$260,150 USD (\$1,031,310 in 2016 USD).⁷ Although we could find no official confirmation letter in the archives, a funding announcement was made in July.⁸ The NSF award number was SES 7704359, and the grant was awarded to the AAG with a start date of July 1, 1977, with Jensen as Project Director. On June 24, 1977 Jensen chaired a Project Directors' meeting at the AAG offices. Also present were Shabad, Wright (both Associate Project Directors), and Nystrom.⁹ While the day-to-day management of the project was the concern of the Project Director, the AAG Council created an Advisory Committee that was chaired by Hoffman with David Hooson (Berkeley) and Richard Lonsdale (University of Nebraska). In August 1977 a letter was sent to potential participants stating, "We are particularly interested in researchers who could prepare studies of individual primary commodities that are likely to play a growing role in Soviet exports. We are also interested in analysis of regional economic development issues, which may be crucial in evaluating Soviet resource potential over the next 10-15 years. And finally, of course, we are interested in the analysis of domestic and foreign trade policies" (Correspondence August 1, 1977).

The purpose of the project was now "to evaluate Soviet export potential in selected forms of energy and raw material, with an eye to the possible implications for the world economy and for Western options in commodity markets."¹⁰ Furthermore, "the central premise of the proposal is that a careful analysis of regional development policies and spatial strategies is essential to a proper understanding of Soviet natural-resource export potential and their implications." Thus, the final version of the project was built around an examination of the relationship between regional development and export potential. It was argued that "no previous study has integrated studies of primary industries with studies of Soviet foreign trade together with an examination of the regional-spatial dimension of Soviet resource development." The project retained its three-phase structure that now involved, 1) analysis of those Soviet natural resources most likely to have a significant impact on world commodity markets over the next few decade, 2) analysis of the regional and spatial dimensions of Soviet resource development policy, and 3) consideration of the implications of those principal findings for the world economy and for Western options in world commodity markets (see fig. 1). Figure 2 presents the organizational structure of the project; Shabad was responsible for the regional aspects of the project, which was dominated by geographers, while Arthur Wright handled the more economic analyses of resource markets. The actual research was conducted via the commissioning of Faculty Research Associates to produce discussion papers on topics that would contribute to the different elements of the project. These papers were prepared in the Department of Geography at Syracuse and soon became essential reading for those interested in the economic geography of the Soviet Union.

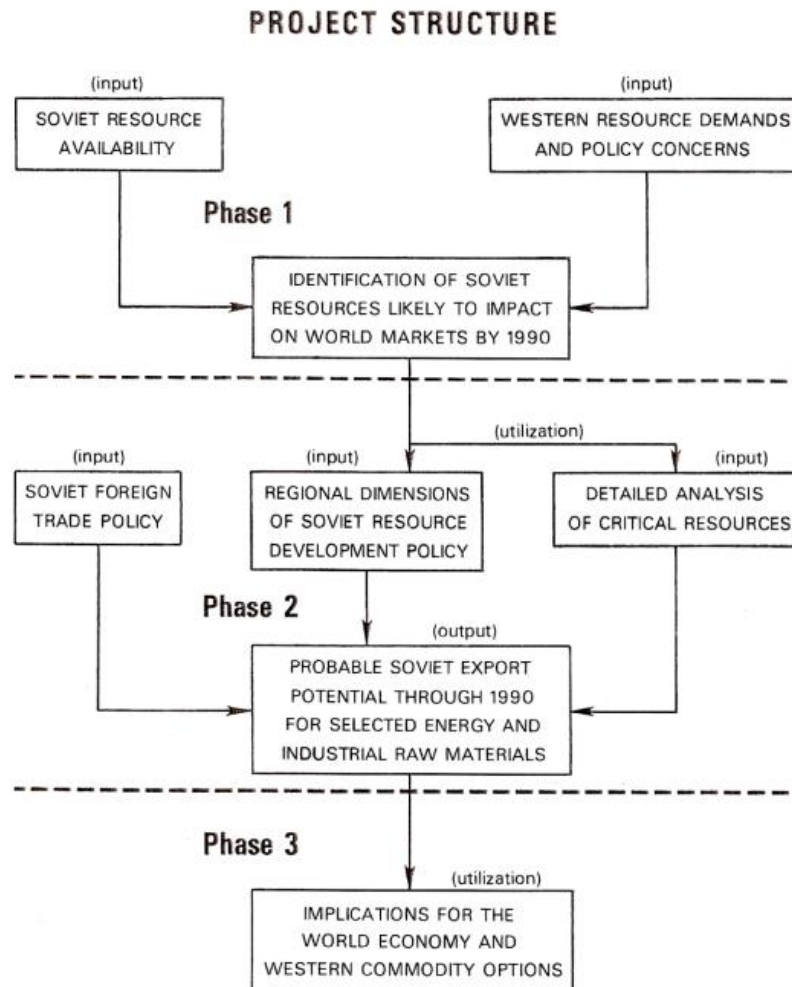


Figure 1. Project Structure.

Source: Jensen, Shabad, and Wright (1977).

In July 1978 Jensen provided the Advisory Committee with a progress report.¹¹ The first discussion papers had appeared, and he was already thinking about additional funding to extend the project into a third year. At that point 24 individuals were involved and the budget was already under pressure. In August 1978 Jensen (1979) drafted a report on the project that was published in *The Professional Geographer*. In the report he noted that: "...the Soviet Union has chosen to become increasingly involved in international trade beyond the socialist bloc and has taken steps to expand exports of raw materials by moving ahead vigorously with resource development in virtually untapped areas of Siberia as well as more developed parts of the country" (Jensen 1979, 75). The costs of and prospects for Siberian development was fast becoming a key theme of the project. He also reported that by July 1978 the project had assembled "an interdisciplinary research team consisting sixteen geographers, six economists, two political scientists and a two geologists" and that "more than thirty assignments had been integrated within three distinct phases of project research." At that time, the first stage was complete and more than a dozen commodities had been identified for detailed study.

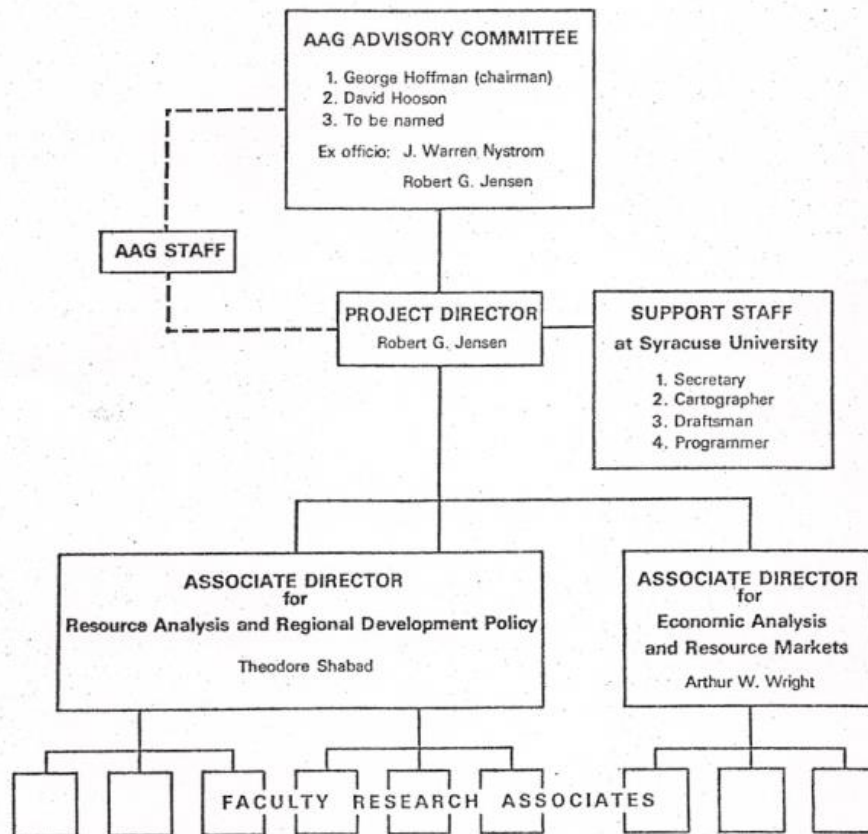


Figure 2. Project Organization.

Source: Jensen, Shabad, and Wright (1977).

In 1979 Jensen was seeking ways of funding a workshop to bring the participants together (Correspondence January 30, 1979). By now, time and funds were fast running out and the Project Director and his associates were already spending a great deal of their own, unfunded time on the project, which had grown beyond the scale initially envisaged. The NSF granted a “no-cost” extension for 12 months that took the termination date to January 31, 1981.

2.3 The project conference

In February 1980 Jensen wrote to the project participants (all 30) and guest participants (60 in total), inviting them to attend a conference on “Soviet Natural Resources in the World Economy,” co-sponsored by the Kennan Institute and the AAG. The conference took place April 4-5, 1980 in the Library of the Wilson Center on the third floor of the Smithsonian Institution’s “castle” building. As Project Director, he wrote to those identified to speak at the conference explaining how he would like the conference to proceed. In that communication Jensen indicated that 22 project participants would be in attendance, and 46 guest participants had already accepted (Correspondence March 24, 1980). A transcript of the conference was published as a discussion paper (Jensen 1980). It suggests a lively exchange of views on Soviet motivations and their capacity to develop their natural resource wealth for export to global markets.

2.4 Production of the project book

With the conference over, the project book became the focus of attention. The AAG was to benefit from any royalties and therefore took great interest in the terms of any publishing contract. A *Prospectus for Publishers* was prepared in the summer of 1979.¹² By January 1980 four major publishers had proposed contracts, but the final say rested with the AAG. After further discussions and amendments, on February 1, 1980 the AAG Director signed a publishing contract with the University of Chicago Press. The contract called for the delivery of the manuscript on or before January 1, 1981, the revised termination date for the NSF grant. The time frame soon proved to be far too optimistic. The problem was that project funding was no longer available and the discussion papers had to be revised, updated, and edited, and a clean manuscript of 2,000 typed pages, plus nearly 200 illustrations had to be prepared in negative camera-ready copy. This had to be accomplished with no financial support, save for a publisher's advance to cover the cost of typing. By February 1982 all but the last chapter had been submitted, but the press would not proceed until the entire manuscript was reviewed. Finally, in April 1982, Elizabeth Johnson, Geography Editor at University of Chicago Press wrote to Jensen informing him that a final reader's report had been received recommending a very clear "go-ahead" (Correspondence April 23, 1982). In June 1982 Johnson wrote to the AAG Director Patricia McWethy informing her that the proposed delivery date was July-August 1983 (Correspondence June 16, 1982). At the final stage the editors made some corrections that delayed its publication until September 1983. The project had taken more than nine years from conception to completion and had produced the definitive statement on Soviet natural resources in the world economy.

3. Re-reading Soviet natural resources in the world economy

As noted in some of the original reviews, *Soviet Natural Resources in the World Economy* is a volume that is encyclopedic in scope and is best treated as a reference tool, rather than a book to be read from cover to cover.¹³ The purpose of this section is to provide a "users guide" based on an assessment of what might be worth reading today, more than 33 years after it was published.¹⁴

The contents are presented in appendix 1. The bulk of the book is organized into three substantive sections: 1) Soviet Resource Development: The Regional Dimension; 2) Soviet Energy and Industrial Raw Materials: Policy, Problems and Potential; and 3) The Role of Raw Materials in Soviet Foreign Trade. In terms of balance, the regional section takes up 35% of the volume, the raw materials section 54%, and the foreign trade section 9%. The remaining 2% is taken up by the introduction and conclusion. Each section starts with an overview chapter that adds considerable value to the individual chapters that were available previously as discussion papers.

3.1 Soviet regional development: the regional dimension

Directly, or indirectly, all of the chapters discussed the challenges of developing Siberia's resource wealth and delivering it to foreign markets. Victor Mote provided a comprehensive assessment of the environmental constraints to Siberian economic development. His analysis remains unequalled and is essential reading for anyone interested in the region. Robert Lewis then explained the problem of attracting labor to the eastern regions. This problem remains and has been exacerbated by the out-migration of a large number of people from the region in the 1990s, so much so that today the Kremlin is concerned about the "effective occupation" of

the region, given the large population across the border in China. Next Robert North examined the regional impact of the Soviet Union's participation in foreign trade and explained how such activity had increased demand for resource-based industrial production and had stimulated the development of the transportation infrastructure to enable foreign trade. This analysis provides a useful historical context for the assessment of the impact of globalization upon processes of regional development in Russia after the collapse of the Soviet Union. The remaining chapters focused on issues related to the development of Siberia and the Soviet Far East. George Huzinec explained how traditional decision-making practices tended to discriminate against Siberian development. Victor Mote examined plans for the development of the Baikal-Amur Mainline (BAM) railway and, rightly, concluded that the project would not have decisive global implications. Allan Rodgers examined the Soviet Far East and predicted that an expansion of foreign trade in the 1980s might promote economic development of the region. This did not materialize, and even in the post-Soviet period, the Russian Far East has failed to make the most of its strategic location as a possible resource-supplier for the Asia-Pacific region (Akaha 1997; Bradshaw 2001; Thornton and Ziegler 2002). Richard Edmonds examined Siberian development from a Japanese perspective, which he describes as "pessimistic or ambivalent"; again, perhaps little has changed. Allen Whiting discussed the strategic dimensions of Siberian development and concluded that Siberian development had the potential to make a positive contribution to the Soviet Union's relations with China, Japan, and the United States, and that there were no compelling strategic reasons for these countries not to participate in the development of the region. Many of the issues raised in this section remain relevant, and the overall conclusions that significant economic growth based on Siberian resource development would be hard won, remains true to this day.¹⁵

3.2 Soviet energy and industrial raw materials: policy, problems and potential

This section examined the industries important to the Soviet Union's export profile. Detailed information on these industries was very hard to find—a problem that persists for some sectors today—and regional data even more so. Therefore, much of the value in these studies lies in the detective-like detail with which they pieced together an understanding of each industry. While, it is understandable that the oil and gas sectors dominated the section, it is the other chapters that have lasting value for the simple reason that there have been numerous subsequent studies of the Soviet and Russian oil and gas industries, but the other industries, such as gold production, have not been subject to such analyses.

Russia's oil and gas production and export potential was, and continues to be, a much-debated topic (see Ellman 2006; International Energy Agency 2014). At the time, the dominant view in the United States was that the Soviet Union lacked the technology to exploit fully its oil and gas reserves, and this was a view shared by Arthur Meyerhoff in his extremely detailed chapter on the oil industry. This analysis has contemporary resonance as a result of the sanctions imposed on the Russian oil and gas industry as a consequence of Russia's actions in Ukraine. Leslie Dienes' chapter on the regional dimension of Soviet energy policy explained how the differing geographies of energy demand and energy production, and the subsequent transportation bottlenecks, imposed huge costs on the Soviet economy and that these spatial problems would play a major role in "the coming energy crunch." A further causal factor in the energy crunch scenario was that the Soviet economy was incredibly energy intensive and inefficient, characteristics explained by Judith Thornton. The Soviet natural gas industry was still in its infancy and had not been the subject of detailed analysis in the Western literature. Thus, Jonathan Stern's chapter on natural gas provided a significant contribution to the wider

aims of the project. As with oil, the problem was not reserves, but with the remote location of the major fields in Siberia, the development strategy employed, and the transportation challenge of moving large volumes of gas to domestic and export markets in Europe (Gustafson 1989). While the ownership structure and market orientation of the commodities examined in this section have changed greatly, the resource geographies have not; in fact they have become even more remote as the resource frontier is being pushed further east and north and offshore (Gustafson 2012). Thus, many of the issues raised by these chapters remain of direct relevance to Russia today, and they still provide essential historical context.

3.3 Soviet natural resource exports and the world market

The final section dealt with the foreign trade decision-making process and the impact of Soviet foreign trade activity on world markets. Arthur Wright pointed out that while foreign trade played a modest role in the Soviet economy, there was a trend towards greater foreign trade participation. However, despite the increased activity, the Soviet Union was a relatively passive actor in world commodity markets. Marshall Goldman detailed the growth in Soviet foreign trade and estimated that raw materials accounted for more than 80% of hard currency exports. Ed Hewett then focused on the nature of the decision-making processes concerning primary products exports. He suggested that Soviet planners had a high degree of control over these material flows and were able to balance the needs of Eastern Europe with the desire to export to hard currency markets. George Hoffman documented how, since the mid-1960s, Eastern Europe's energy mix had shifted from a reliance on domestic coal to a dependence on imported hydrocarbons from the Soviet Union. The legacy of that energy dependence remains in East and Central Europe, especially in relation to natural gas imports from Russia. The development of the Siberian fields necessary to maintain oil and gas exports imposed high costs on the Soviet economy in the 1980s. Lawrence Brainard explored the various ways in which such developments could be financed. His analysis suggested that the prohibitive costs of Siberian development and the lack of alternative sources of finance might put a brake on the rate of resource development in the 1980s (instead they put a brake on the country's economic growth). In the contemporary context, the high cost of future Russian oil production and its position on global costs curves leads one to question the future prospects for Russian oil exports. Equally, the current sanctions regime is isolating Russian companies from capital markets, which is reducing their ability to develop new fields and also forcing them to sell an interest in their projects—particularly to Chinese companies—to attract finance.

The final chapter aimed to pull together the findings of the project. We know that it was written in haste and really does not do justice to the editors' desire to explore the policy implications of their findings. The central argument was that one could not understand the Soviet Union's potential to export raw materials to world markets without considering the geographical context of such export production. The majority of exports came from regions that were both remote from domestic centers of demand and from European export markets. Furthermore, the environmental conditions and lack of infrastructure made production costly and difficult to sustain, let alone increase. As a consequence, the Soviet Union had a limited capacity to expand its export production. This left it vulnerable to changes in the terms of trade on global markets; for example, benefitting from windfall profits when energy prices were high, but suffering a serious deterioration in terms of trade when they were low (this all sounds very familiar). As with most economic analyses of the Soviet economy at that time, all indications were that the system was increasingly unsustainable, but nobody predicted that it would fail. However, the regional dimensions, so effectively analyzed in the project,

undoubtedly played a major part in the eventual collapse of the Soviet system at the end of the decade.

4. Russia's Natural Resources in the Global Economy: A Re-assessment

This final substantive section does not present a detailed re-assessment of Russia's natural resources in the world economy; just as with the original project, such an exercise is well beyond the abilities of any individual. In fact, the first observation that can be made is that Western academia no longer has the capacity to replicate such a project. The majority of the original contributors are either no longer alive, no longer in academia, or are enjoying their retirement.¹⁶ Furthermore, many of the following generation of specialists trained by these scholars long ago left academia for government and the private sector. Added to which, the subsequent generations of geographers, economists, and political scientists working on the region reflect wider trends in their disciplines and have not been particularly interested in the resource geographies of Russia. The net result is that we simply do not have the specialist academic knowledge necessary to carry out such an analysis.¹⁷ The project team brought together specialists who had years of experience working on the Soviet Union. Their contributions reflected the lifetime's study needed to piece together the minutiae of resource development in the Soviet Union, where information was simply not readily available.

As we reflect on the major themes of the original project that also remained key themes in *Post-Soviet Geography* and then *Eurasian Geography and Economics*, we are struck by how relevant they remain today. The political economy of Russian resource development may be different, but, as enumerated below, Russia's economy is still dominated by the resource sector, and its position in the world economy is still determined by its resource exports. During the 1990s much of Russia's resource sector was privatized, often by dubious means; however, in the 2000s the Kremlin clawed back control over the energy sector (Bradshaw 2009). Furthermore, Putin has made much of the country's resource wealth and talked about Russia as an "energy superpower" (Rutland 2008). This claim rings rather hollow today, but it demonstrates that the natural resource sector is still critical to Russia's economic and geopolitical standing in the world.

The re-assessment that follows below borrows the basic structure from the original project and is divided into four sub-sections. The first and most substantial sub-section assesses the role of natural resources in the contemporary Russian economy; the second considers the role of Russia on global natural resource markets; the third examines the impact of natural resource exports on Russian economic performance; and the final sub-section returns to the significance of the regional dimension in terms of Russia's contemporary "Pivot to Asia."

4.1 The role of natural resources in the contemporary Russian economy

The original project clearly demonstrated the crucial role that natural resources played in the functioning and performance of the Soviet economy. Published in 1983, the contributors may not have been surprised by the devastating impact that the steep decline in commodity prices that occurred in 1985 inflicted on the Soviet economy. The natural resources analyzed in the original project together constituted an overwhelming share of the Soviet export profile, with natural resources accounting for just under 80% of Soviet exports to the West in 1990 (Lavigne 1995, 85).

However, as noted earlier, this dependence on natural resource exports proved fatal for the Soviet economy.

In 1986 the price of oil fell by around 70%, which along with a more general decline in natural resource prices caused a precipitous decline in Soviet export revenues. Annual export revenues from oil alone fell from 260 billion USD in 1982 to 75 billion USD in 1986 (Gaddy and Ickes 2005, 562). This in turn caused the Soviet budget deficit to grow to levels not seen since the Second World War (Connolly 2013, 94). Indeed, the radical reforms pursued by Mikhail Gorbachev after 1986, which ultimately led to the disintegration of the Soviet Union, were possible largely only because the fall in natural resource prices made the need for economic reform so urgent (Gaidar 2006).

This, of course, occurred after the sharp rise in natural resource prices that took place in the 1970s made it possible for the Soviet leadership to postpone reforms to improve the functioning of the centrally planned economy, finance a build-up in military forces, and pursue an assertive foreign policy in Africa and Asia, all as living standards grew slowly (Gaidar 2006; Hanson 2003). The Soviet natural resource endowment analyzed in the original project thus proved to be a fickle benefactor, quickly taking away what it had given so generously only a few years before. The dependence of the world's second superpower on volatile and unpredictable natural resources also exposed the brittle nature of Soviet power, laying bare its lack of what Douglas North and colleagues refer to as "adaptive efficiency" (North et al. 2012).

Twenty-five years after the demise of the Soviet Union, Russia remains as dependent on natural resources as the Soviet Union once was, with its economic and geopolitical fortunes heavily conditioned by fluctuations in global commodity prices (Bradshaw and Connolly 2016). As illustrated in figure 3, the scale of Russia's dependence on natural resource exports remains very strong. Crude oil and refined oil products account for the largest share of export revenues. The relative influence of the two has shifted over the past two decades, with higher value refined oil products accounting for a rising share of oil exports at the expense of exports of crude oil. This occurred as a direct result of government changes to the taxation system to encourage a shift towards the export of higher value-added products (Henderson 2015; Moser 2015). This tendency stands in sharp contrast to the Soviet period, where crude oil tended to exceed refined product sales by a factor of 2.5:1 (Shabad 1983, 255).

Natural gas continues to play an important role in Russia's export profile, although revenues have plateaued since the global recession of 2009, which was caused by slowing demand from Russia's principal gas customers in the European Union (EU). As discussed later, efforts to diversify the gas customer base are focused on the deal to supply up to 38 billion cubic meters of gas to China through a pipeline that is currently under construction. However, the prospects for the deal remain uncertain, and it is by no means assured that China will purchase sufficient Russian gas in the future to make up for the decline in demand that is projected to take place in Europe (Lo 2015). In recent years Russia has also emerged as an exporter of liquefied natural gas (LNG), although this currently accounts for a relatively small share of Russia's total natural resource exports. The Russian government has stated that LNG exports, especially to Asia, will form a key part of its future energy strategy, although numerous problems have beset efforts by Gazprom, Russia's largest gas company, to expand LNG exports (Ministry of Energy 2014; Henderson and Moe 2016).

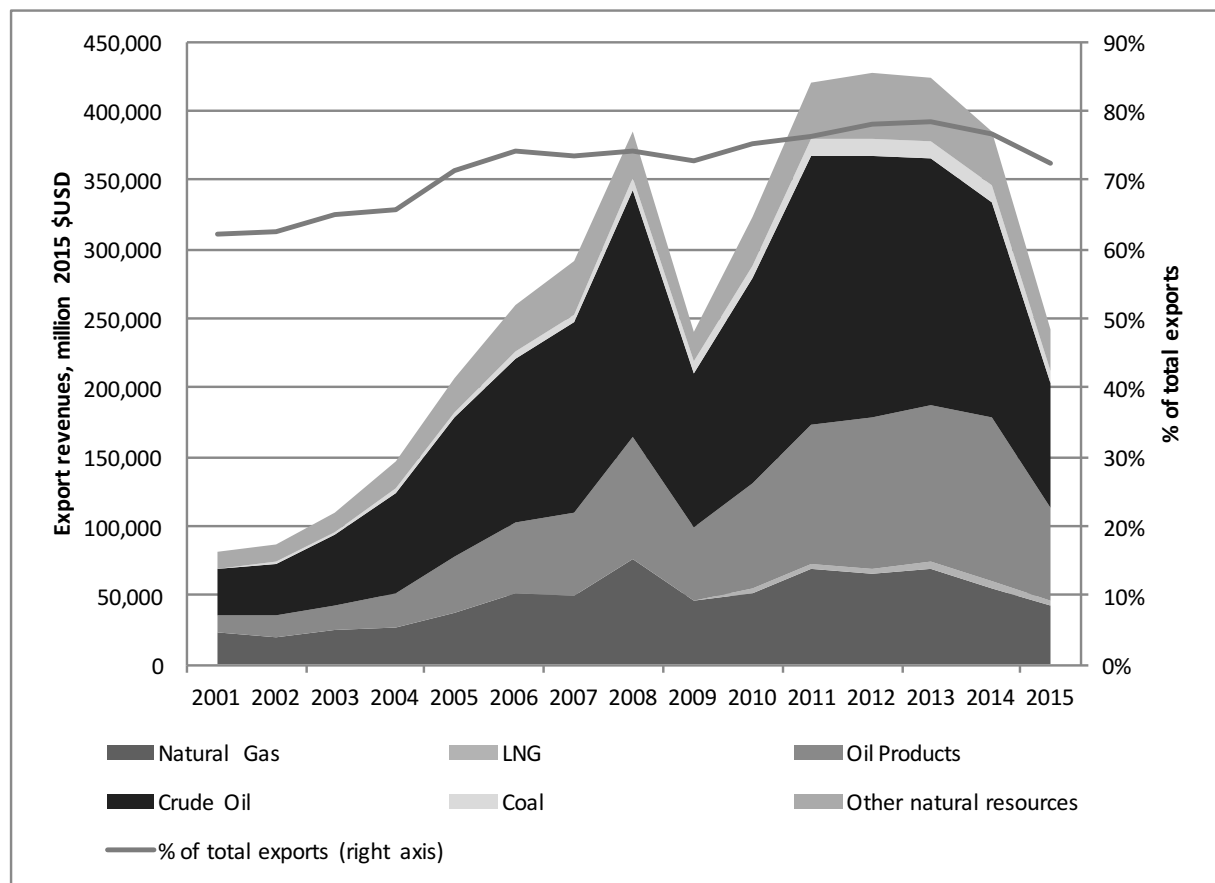


Figure 3. Natural resource export revenues, 2001-2015 (2015, USD).

Source: For oil and gas revenues, CBR (2016); for other natural resources, UN Comtrade (2016).

Although Russia's exports of oil and gas have attracted the greatest attention, coal remains an important component of Russian natural resource exports, with total export revenues around twice as high as for LNG. This might have surprised Theodore Shabad (1983, 252-253), who forecast a bleak future for Soviet coal after the share of coal in total Soviet exports fell from 4.2% in 1975 to 2% in 1981. Indeed, after the chaotic 1990s, the share of coal in total exports had fallen to just 1.2%. However, it has since enjoyed a resurgence in fortunes, with coal production expanding from 122 mtoe (million tons of oil equivalent) in 2001 to over 165 mtoe in 2013 (BP 2016), with exports accounting 2.7% of total exports.

Taken together, hydrocarbons, and especially oil products, continue to dominate Russia's export profile, accounting for anywhere between 55%-75% of total Russian exports in any one year and generating up to 380 billion USD in export revenues. However, other natural resources have proven to be an important source of export revenues. As shown in figure 4, non-hydrocarbon natural resources have tended to account for around 8%-9% of total Russian exports since 2001.

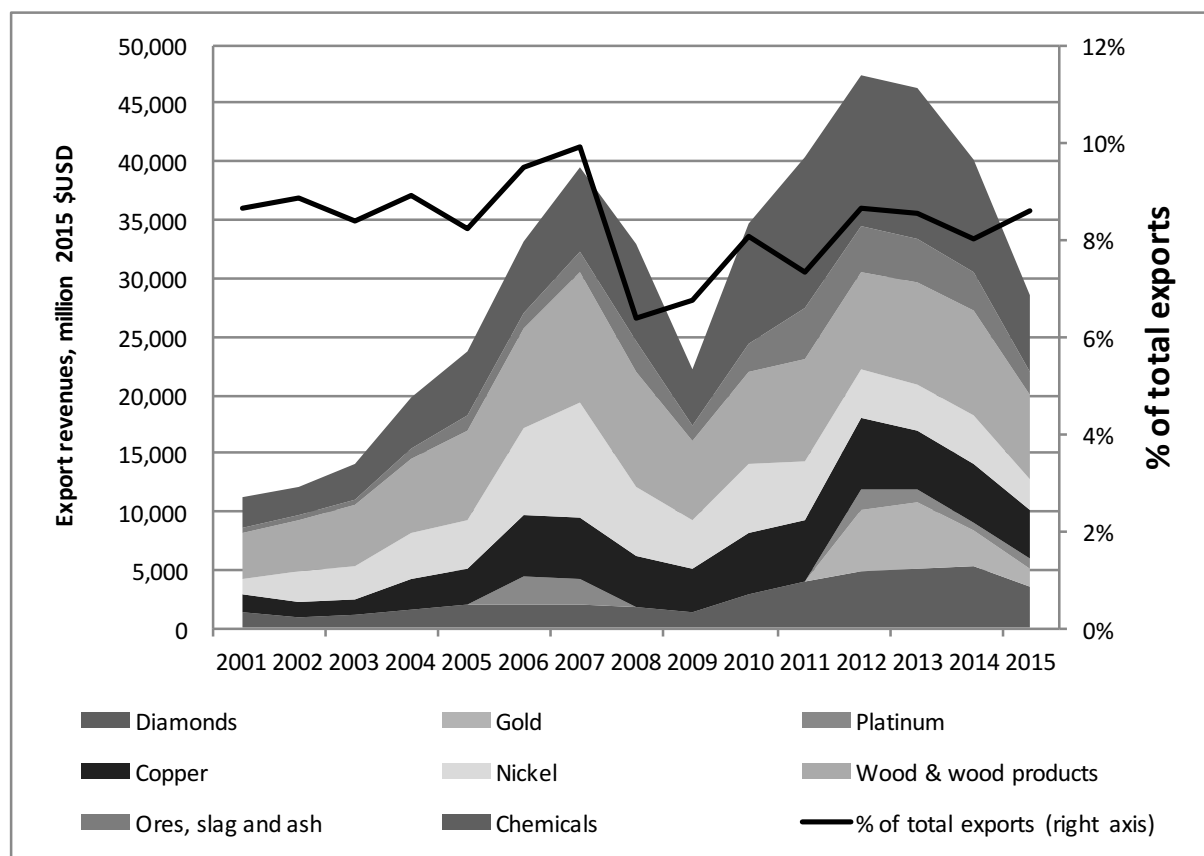


Figure 4. Mineral and chemical export revenues, 2001-2015 (2015, USD).

Source: UN Comtrade (2016).

These natural resources play a slightly different role in Russia's export economy compared to that of the Soviet Union for several reasons. First, the dismantling of the centrally planned economy led to a sharp reduction in domestic demand for minerals that were used for the production of metals, which played an important role in supporting an economy that was both "hyper militarized" and suffered from excess investment (Gaddy 1996; Gaddy and Ickes 2013). The subsequent reduction in defense spending and resource-intensive investment caused a slump in domestic demand for minerals, which in turn meant that these sectors became more dependent on global export markets (Fortescue 2013, 410). Second, there were several categories of natural resources that were produced primarily in other Soviet republics, such as bauxite and manganese in Ukraine, and, to a lesser degree, chromium and uranium in Kazakhstan (Fortescue 2013, 418). After the dissolution of the USSR, Russia ceased to be a producer of these products and in some instances became an importer.

As illustrated in figure 4, organic chemicals (e.g., acyclic hydrocarbons) and inorganic chemicals (e.g., ammonia) account for the largest share of non-oil and gas natural resource exports, closely followed by wood and wood products. Minerals such as diamonds, gold, platinum, and nickel accounted for nearly 15 billion USD of export revenues in 2015, a period when commodity prices were depressed by recent standards. Indeed, the volume of export revenues supplied by these natural resources is most likely much greater due to the fact that no data are available for gold and platinum exports for many of the years under consideration here. However, given that production data indicate that Russia is among the largest producers

of gold, platinum, and diamonds, it is likely that actual exports are considerably higher than official data would suggest.

Thus, while non-oil and gas natural resource exports account for a considerably smaller share of Russia's export basket than oil and gas, it is nevertheless noteworthy that even in 2015 – when natural resource prices were depressed – export revenues in the sector were more than twice as large as those derived from the sale of armaments, an area in which Russia is the world's second largest exporter (SIPRI 2016).

4.2 Russia on global natural resource markets

Russia, like the Soviet Union before it, is a price *taker*, not a price *maker* on global natural resource markets. As illustrated in Table 1, Russia's share of most export markets, while significant, is not so high as to confer exceptional market power to Russian companies. Indeed, there are certain sector-specific conditions that serve to reduce Russian market power even where its overall share of global exports is highest. For instance, in the area where Russia's market share is greatest – gas – the continued dependence on demand from European countries that are supplied via existing pipeline infrastructure ties Russia's gas export economy to countries where gas demand growth is nearly stagnant. While it is true that Russian plans to develop gas supplies to Asia are unfolding, albeit slowly, it is also true that the bargaining position of potential Asian customers vis-à-vis Russia is enhanced by low European demand, which has reduced the ability of Russian companies to leverage robust demand from more than one area to obtain higher prices.

Table 1. Russian share of selected global natural resource exports, 2001-2014.
(percent of recorded global export sales)

	2001	2007	2014
Gas	19.8	18.8	14.6
Nickel	13.3	19.0	12.7
Oil products	6.1	9.7	11.8
Coal	5.8	10.1	11.7
Crude oil	7.4	11.4	10.9
Wood and wood products	3.8	7.1	5.5
Inorganic chemicals	2.3	2.7	4.2
Diamonds	2.5	1.7	3.5
Copper	2.9	3.1	3.1
Wood pulp	2.8	2.8	2.6
Platinum	0.0	6.0	2.4
Ores, slag and ash	1.1	1.3	1.5
Organic chemicals	0.8	1.1	1.0
Gold	0.0	0.0	1.0

Source: UN Comtrade (2016).

What is also evident from the data presented in Table 1 is the fact that Russia's share in most product categories peaked in 2007 but has tended to decline thereafter. This is not because of declining production of natural resources in Russia; on the contrary, in most cases, production

has risen. Instead, the explanation lies in the increased global investment across all sub-sectors of the natural resources industry, no doubt in response to the vibrant demand for commodities that coincided with rapid, resource-intensive economic growth in China until 2013 (Pettis 2013). This expansion of global investment that resulted in the erosion of Russian market share can be explained by increased investment in, *inter alia*, oil production in North America, LNG exports from Australia and the Middle East, nickel exports from the Philippines, and in wood products from Canada, Indonesia and the Philippines. Thus, even if production levels across these product categories continue to increase in Russia – which is by no means assured – it is not certain that this will cause a corresponding increase in Russia's global market share.

4.3 Impact of natural resource exports on Russian economic performance

While Russia's importance to global natural resources markets does not necessarily translate into market power, it is difficult to overstate the importance of natural resource exports to the functioning and performance of the Russian economy. Those studies that have sought to estimate the importance of resource revenues to GDP growth have tended to focus on oil and gas alone and measured the direct value-added share of the oil and gas sectors in aggregate GDP (e.g., Ahrend 2005; Kuboniwa, Tabata, and Ustinova 2005; Gurvich 2010). These estimates suggest that, depending on the precise point in time, the oil and gas sectors account for anywhere between 10%-25% of GDP. If we assume that other natural resources would add an additional 10% of this figure, then total resource revenues might account for somewhere between 12.5%-27.5% of Russian GDP.

This, however, does not tell the whole story. As well as the direct contribution of the natural resource sectors to Russian GDP, it is also necessary to take their indirect contribution into account. As described by Gaddy and Ickes in their schematic account of the relationship between resource revenues and economic performance (e.g., 2005, 2009), this includes incorporating the way in which resource rents are shared throughout the Russian economy via an informal rent sharing mechanism, which includes price subsidies, informal taxes, and excess costs. In addition, revenues generated by the natural resources sector are redistributed via a mix of direct transfers (e.g., relatively transparent, formal taxes on natural resource exports to finance state spending) and indirect transfers (e.g., through resource sector firms supplying inputs at below market price to other enterprises).

Once these additional links are taken into account, it is clear that natural resources exert an extraordinarily strong influence over economic performance in Russia. As illustrated in Figure 5, the recent correlation (i.e., 2002-2014) between annual changes in natural resource export revenues, on the one hand, and annual growth in GDP (Pearson's $r = 0.85$), fixed investment ($r = 0.91$), and manufacturing ($r = 0.92$) on the other, is extremely high. This provides further support, if needed, to Gaddy and Ickes' assertion that it is the rate of change in resource export revenues that drives economic performance in Russia, and not the level of resource revenues. Indeed, the fact that growth in natural resource rents began to decline in real terms in 2012 helps to explain the protracted and ongoing slowdown in the Russian economy that began at around the same time (Mau 2013, 2014).

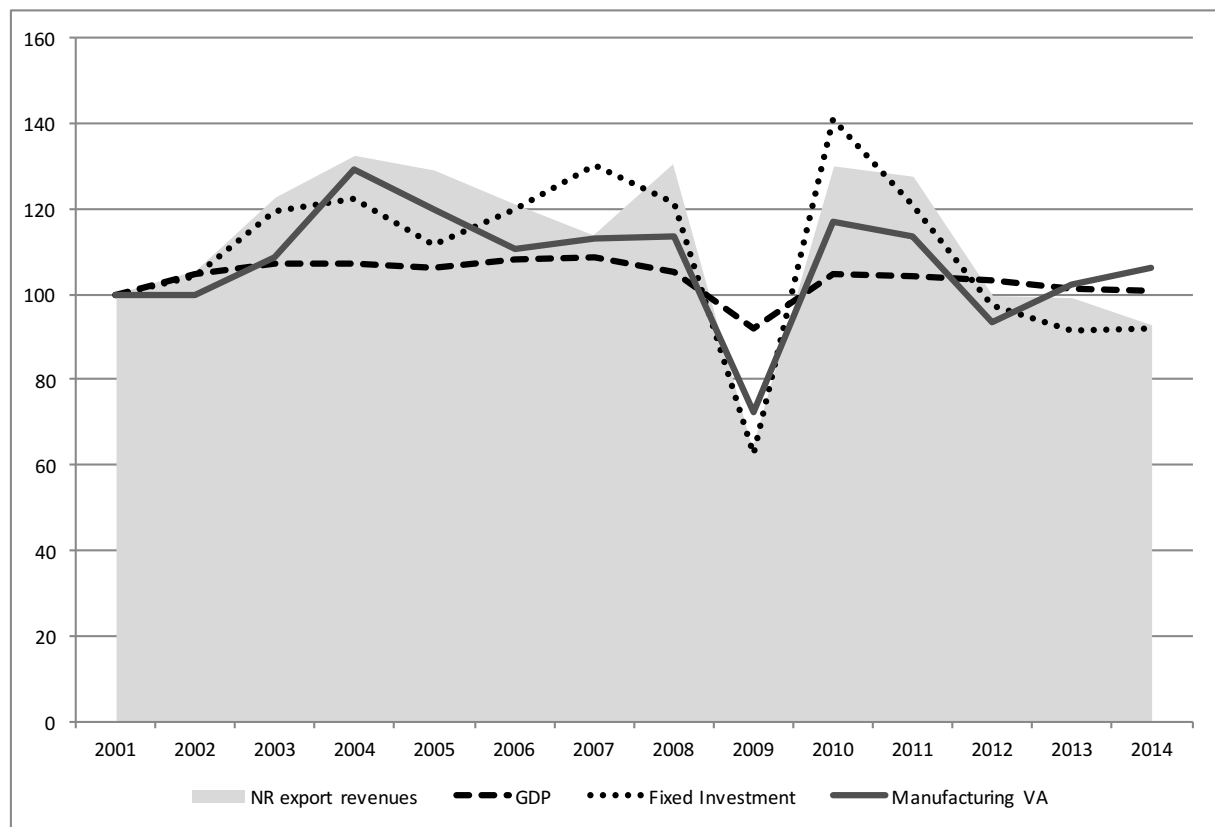


Figure 5. Annual growth in natural resource revenues and indicators of Russian economic performance, 2002-2014.

Source: Rosstat (2016).

Quite simply, the fortunes of the Russian economy continue to be shaped primarily by developments in global natural resource markets, a structural characteristic of the Russian economy that over two decades of economic transformation has failed to change. However, the disparity between Russia's dependence on natural resource exports and its relatively small degree of market power reveals the crucial paradox of Russian economic power: Russia relies to an exceptionally large degree on the extraction and sale of a range of goods over which it exerts very little in the way of price-forming influence. In this respect, Russia's economic sovereignty, something assigned great importance by the current leadership (Security Council 2015), is in fact severely constrained (Connolly and Hanson 2016).

To be so dependent on a notoriously volatile source of export revenues is perhaps uncomfortable enough for policy makers in Moscow; however, there are persuasive arguments that suggest the future for Russia's natural resource sector may become the source of even more vexation for Russian policy makers. First, investment in developing genuinely new (i.e., discovered and/or developed in the post-Soviet period) deposits of natural resources has been insufficient to guarantee that production will expand in the future (e.g., Gustafson 2012; Fortescue 2013). This is true of both the hydrocarbons and non-hydrocarbon resources sectors; in the case of the former this is a situation that is aggravated by Western sanctions that are aimed at future production (Connolly 2016; Davis 2016). Second, doubts over the quality (i.e., in terms of grades and mineralogical structures) of Russia's mineral wealth also poses questions about the viability of future production in a number of different sub-sectors (Fortescue 2013). Third, rising extraction costs imposed by unfavorable geological and

geographic conditions are likely to reduce the share of the revenues available to the state for redistribution to favored political constituencies. This suggests the need for a critical assessment of Russia's future resource prospects, not because of their impact on global resource markets—a key driver for the original project—but because of their centrality to the future viability of the Russian economy and the Russian state.

4.4 The regional dimension and Russia's Asian pivot

The importance of the regional dimension was a central component of the original project, as well as other studies of the Soviet Union at the time (e.g., NATO 1979). Then, the focus was on the so-called east-west debate and the balance between investment in the European regions and Siberia (Schiffer 1989). Even at that time, in the case of the Soviet Far East it was accepted that increased trade with the Asia-Pacific region was important (Bradshaw 1988). During the 1990s the collapse of central authority in Russia resulted in greater regional autonomy and an interest in the regional dimensions of economic transition (Hanson and Bradshaw 2000). Following the election of President Putin in 2000 and the re-establishment of the “power vertical,” the Federal Government reasserted its control over the regions and interest in the regional dimension in Russia has waned, although the regional economic consequences of Russia's resource abundance remain (Bradshaw 2006). However, this has been a consistent concern for the economic development of the Russian Far East, which in recent years has been married with a desire to diversify energy exports to reduce Russia's dependence on European markets and benefit from the economic dynamism of the Asia-Pacific region (APR), particularly China. There is nothing new about this “Asian Pivot,” and just as before there is some distance between the rhetoric and the reality. That said, an oil pipeline – the East Siberia-Pacific Ocean or ESPO pipeline – has been built to move oil from Siberia to China and to the Pacific coast, and Gazprom has recently committed to building the “Power of Siberia Pipeline” that will link new gas field in the Russian Far East and East Siberia to China by the end of this decade (Paik 2012, 2015; Henderson and Mitrova 2016). Russia would also like to build a second pipeline that would link the gas fields of West Siberia to Chinese markets—the so-called Altai route. There are obvious parallels with the building of the BAM railway in the 1970s, and the railway has played an important role in the construction of these pipelines. At the same, the large international oil and gas projects offshore of Sakhalin have provided a new source of energy exports to Asia, including Russia's first LNG plant (Bradshaw 2010). Alongside this, the Russian Far East remains an important exporter of wood and wood products, coal, minerals, and fish and marine products to markets in Northeast Asia. But, just as was the case in the Soviet period, the emphasis remains upon the export of relatively unprocessed raw materials, and the contemporary “Asian Pivot” is likely to reinforce Russia's reliance upon its natural resource economy. A further problem is that reliance on the export of primary products tends to be capital intensive rather than labor intensive and is unlikely to support a re-population of the Russian Far East, which is a key strategic goal of the Russian Government.

5. Conclusions

For the generation of scholars who worked alongside Victor Winston and who published in *Soviet Geography* and its later incarnations, the *Soviet Natural Resources in the World Economy* project was undoubtedly a high point and a major achievement. We maintain that the key research questions that were the focal point of the project have contemporary relevance. An understanding of the economic, geographic, and geopolitical consequences of Russia as both a resource-abundant and resource-dependent economy remains critical to

identifying the contemporary challenges that Russia faces and its prospects for the future because 1) reliance upon the resource sector remains a defining characteristic of Russia's political economy; 2) it shapes the nature of Russia's interaction with the global economy; 3) although Russia is a significant producer in many resource sectors, it remains a relatively passive price taker and is unable to influence its terms of trade—this weakness is revealed in its negotiations over gas exports to China; and 4) the regional dimensions of Russia's resource abundance remain important, particularly in relation to the contemporary ambition to expand trade and cooperation with the APR.

Finally, the third element of our paper presented an exploratory analysis of Russia's natural resources in the global economy, and it suggests that there are major challenges confronting Russia's resource-based economic model. We suggest that a more thorough analysis is needed to assess whether or not Russia can find a more sustainable economic development model and with it, perhaps, a different relationship with the global economy.

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January 30, 1979. Letter from Robert G. Jensen to Dr. Brian Silver, Chairman of the Research and Development Committee AAASS.

March 24, 1980. Letter from Robert Jensen to conference speakers.

April 23, 1982. Letter from Elizabeth Johnson to Robert Jensen, with three copies of the final reader's report.

June 16, 1982. Letter from Elizabeth Johnson to Patricia McWethy.

Notes

¹ The initial archival research for this article was carried out at the offices of the AAG in Washington DC in the summer of 2008, and the authors would like to thank the AAG for the assistance and hospitality provided. The project was then side-lined by a need to focus on other energy-related work and a change of institution.

² We use the term *global* here, rather than the original *world*, to acknowledge that impact of globalization upon the nature of the international economic system.

³ The first version of the research proposal is undated, but it is likely to have been completed for a November 1975 NSF submission deadline.

⁴ This appears to be a third draft of the proposal.

⁵ This matter was raised by J. Warren Nystrom in a letter to George Hoffman and Theodore Shabad in a February 11, 1976 letter.

⁶ This was reported by J. Warren Nystrom in a letter to George Hoffman, October 8, 1976.

⁷ Calculated using the US government's deflator. Accessed 22 June 22, 2016. <http://data.bls.gov/cgi-bin/cpicalc.pl?cost1=260150&year1=1977&year2=2016>

⁸ We did ask the NSF if they had any records of the project, but none could be found.

⁹ Robert Jensen, Minutes of the Soviet Natural Resources in the World Economy, Project Directors' Meeting, June 24, 1977, Washington DC.

¹⁰ The quotations in this section are taken from the final version of the project proposal submitted to the NSF by Robert Jensen. I am grateful for the assistance of Professor John Mercer at Syracuse University, who obtained this from the Syracuse archives. A copy has now been sent to the AAG archives.

¹¹ Memorandum to Project Advisory Committee, from Robert Jensen, Project Director, July 13, 1978.

¹² Robert, G. Jensen, Theodore Shabad, and Arthur W. Wright, The Association of Geographers Project on Soviet Natural Resources in the World Economy, *Prospectus for Publishers*, 1979.

¹³ It took a while for reviews to appear, the most worthwhile were by Ralph Clem (1995) in *Geographical Review* and Chauncy Harris (1984) in the *Annals of the Association of American Geographers*.

¹⁴ The book is still available new from the University of Chicago Press on Amazon.Com for \$185 (although you can buy a used copy in good condition for as little as \$15.94). The original price was \$100, which (according to <http://data.bls.gov/cgi-bin/cpicalc.pl>, accessed June 22, 2016) at today's prices should be \$231.22, so it is a better deal now than when it was first published!

¹⁵ This was a broader conception of "Siberia" that included then Soviet, now Russian Far East.

¹⁶ By our estimate only three of the project authors are currently still involved in research on the former Soviet Union.

¹⁷ There are exceptions, such as Stephen Fortescue's (2006, 2013) work that is referenced below.